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20 March 1962

I INTRODUCTION

Purpose of the contract was to improve the comfort and performance of the High Altitude Partial Pressure Suit Assembly used by project pilots.

Part I of the Contract Schedule and Appendix I, attached thereto, established the scope of work to be accomplished.

II DISCUSSION

All items called out under Scope of Work were accomplished and one helmet was delivered on Shipping Voucher No. S3928-604-M dated 10 June 1960.

Field tests resulted in the following comments and suggestions for improving performance of the helmet submitted.

1. Helmet neck seal skirt should be made more readily removable in the field. The design should emphasize mechanical fastening rather than the use of the more permanent cementing method.
2. Flocking on the neck seal should be eliminated because of the susceptibility of the flock particles to separate and become lodged in the exhalation valve.
3. Durability of the electrically conductive coating should be improved.
4. Chamois earphone cushions to be used in lieu of rubber covered foam cushions.
5. Provide more secure mounting of the inhalation valve so that the inlet hose with its high leverage potential cannot rotate the valve in the mounting.

The helmet was returned to the contractor with the above listed comments and suggestions for improvement.

At the request of the project officer, the helmet was submitted to Wright Air Development Center for performance test on the electrically heated visor. Informal reports indicated that the .7 watts per square inch coating appeared to be adequate. The helmet was returned to the contractor.

Prior to proceeding with changes suggested in the field test report, the project was reviewed with regard to the availability of additional funds to accomplish the desired changes, since allocated funds had been expended.

Coincidentally, key Headquarters' project personnel related to the helmet development had been removed from the project due to circumstances on record. Further activity was not approved.

IV CONCLUSIONS

1. The basic objectives of improving the comfort and performance of the High Altitude Pressure Suit Assembly by considering use of a modified Full Pressure Suit Helmet were practical.
2. The first prototype helmet submitted did not fully meet operational requirements. Changes requested to be made were estimated to be readily achievable.